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POTATO MARKETING DEVELOPMENTS

C. W. Waid, Chief ,Fruit and Vegetable Standardization
Columbus, Ohio

The marketing of the American potato crop is becoming each year an increasingly complicated and difficult problem. The methods employed in one potato producing section usually are not suited to another section unless the two sections are similar in their production methods.

Potato growers throughout this country have given as a class, a very large amount of study to production methods. In many sections of the country today, they are producing very much better quality potatoes than were produced a few years ago.

The number of varieties grown in many of the shipping centers has been reduced from a large number to very few in many instances. The production and distribution of Certified Seed Potatoes has been receiving much attention, but not too much.

Disease control has been studied by hundreds of able workers until practical methods have been worked out for most diseases. The insect problems which in the early days of potato production were considered serious are no longer feared by the potato grower who uses the best known methods of control.

All of these studies have been necessary, and we have no desire to depreciate any of them. However, it does not profit a grower no matter how good a crop of potatoes he may produce if he can not sell them to advantage. In other words, the selling of potatoes is just as important and at times even more important than the growing.

The columns of the Potato Journal have been used largely for the purpose of bringing to the attention of the members of the Potato Association of America the most up-to-date information relative to various phases of production measures.

We believe that a larger amount of space than has heretofore been allotted to the marketing of potatoes can be used for this purpose in these columns to good advantage.

We would like to see every important potato producing section of this country represented in these columns at appropriate times, along marketing lines.

The growers who are holding potatoes for a late market in the northern sections of the country are vitally interested in what the growers in Florida and Texas are doing when their potato crop is ready for marketing.

In fact, there is a reciprocal relationship between every potato producing section and every other one.

We can no longer be independent as was possible many years ago. Improved transportation has made us all neighbors when it comes to marketing our potatoes. Furthermore, improved methods of storage have had an influence similar to that of the railroads in bringing potato growers closer together.

Perhaps the one thing which above all others is interfering with the best possible marketing of the potato crop of this country is the lack of uniformity in the use of containers and in the methods of grading.

Much improvement has been made during the last few years in the grades of potatoes which are placed on this market. However, potato growers have yet to be brought to realize, to the extent that they should, the influence of quality on consumption.

There has been too much of a tendency on the part of most growers to feel that if they are able to sell their potatoes to a wholesaler or jobber that their responsibility is at an end. They are too often inclined to overlook the fact that the consumer alone is the one who controls consumption.

Every consumer who is dissatisfied with the potatoes which he buys becomes a liability. He may take another chance and buy again, but he is more likely to use a substitute for a time at least every time he buys potatoes which are not satisfactory. At best, he will not use as many potatoes as would be the case if the quality was up to his expectation.

It may be argued that potatoes are a staple food and that, therefore, will be used to the fullest extent in spite of the quality. It no doubt would be a revelation to a good many potato growers if they could be brought face to face with the hundreds and in fact thousands of families in the large cities which use potatoes sparingly and some not at all.

Many of these families are potential potato users, but have been driven away from potatoes because of the poor quality which they have been forced to accept when they have purchased potatoes.

We hope to be able to secure articles from many men experienced in the handling of potatoes throughout the country for use in these columns.

We invite anyone who has something of value to give along the line of potato marketing in its various phases to send same either to the writer or the Editor of the Potato Journal.

May we not make the subject of marketing a vital part of the Potato Journal?

THE SEED POTATO SITUATION IN OHIO

Earl Jones, Extension Service, College of Agriculture
Ohio State University

Prior to 1921 the potato industry in Ohio had been on a decline for some time. A number of factors had been operating to bring about this decline, among them being low yields per acre, due to the use of unsatisfactory seed potatoes. There was a general opinion, that Ohio could grow seed potatoes of as good quality as were grown elsewhere, but the investigators did not determine just what Ohio growers were doing along this line.

In 1920 a small lot of certified northern grown seed potatoes were brought into Erie County and planted beside local potatoes, under the supervision of the Extension Service of the Agricultural College. The certified seed was found to be noticeably superior to the local seed potatoes, when the yields were determined on adjacent plots.

Certified northern grown seed was, during the next two years, introduced into the late potato section of northern Ohio. Careful tests indicated that the certified seed was noticeably superior to the potatoes that northern Ohio farmers were planting, in nine cases out of ten. The exceptions were found on farms, where seed potatoes, which had been carefully selected for several years, were planted. The results indicated that northern Ohio farmers can grow good seed potatoes, but that the majority of the growers had been planting inferior seed potatoes.

The use of certified seed potatoes soon became an established practice in northern Ohio because of the profitable increase in yield, brought about by their use.

"How often must we purchase certified seed potatoes?" was the next question raised by the growers. This problem could be solved only in the field and several years work under northeastern Ohio conditions would be necessary before the solution could be found.

In many cases the product of certified seed produced a satisfactory crop the next year. Many growers therefore, did not buy certified seed every year, but continued to plant the product of the certified seed purchased three or four years ago.

This practice is not satisfactory for Ohio conditions. Satisfactory seed potatoes cannot be grown in Ohio unless special care is taken in seed selection, roguing and storage. Lacking this care,

potatoes "run out" and become unsatisfactory for seed. This may be due to the spread of degenerative diseases, improper winter storage, or to a combination of these and other causes. It is not within the limits of this paper to consider the cause of this "running out". It does occur and the result is financial loss for the grower who plants "run out" seed.

When certified seed was first introduced into Ohio, the writer could tell, even from a fast moving train, whether a potato field had been planted with certified or local "run out" seed. Certified seed produced a field of uniform, vigorous growing plants of a dark green color. The vines from home grown seed varied greatly in size, and with an arrangement of branches and leaf color, typical of "run out" potatoes.

During the summer of 1927, the writer has seen many fields, somewhat typical of "runout" potatoes. The growers have kept their old seed too long and have lost in the yield and quality of the crops harvested. It has proven more expensive to plant "run out" seed, than to buy certified seed.

The better growers, the men who harvest 300 bushel yields or better, appreciate the value of good seed potatoes and are demanding not only certified seed, but the best certified seed that can be secured. Many other growers have postponed buying certified seed, because of the expense and have figured that their own seed would do for another season. This often means decreased yields and financial loss.

The quantity of certified seed available is sufficient for only a small fraction of Ohio's potato acreage. Many growers do not see their way clear to buy seed for their entire acreage, even if good seed were available. Such growers can profitably buy enough certified seed each year to grow the seed necessary to plant the next year's crop. They cannot afford to risk planting their entire acreage with potatoes of doubtful seed quality. Potatoes which have been on the farm for more than one year without special selection and roguing and with ordinary winter storage are of doubtful seed quality. The Extension Service of the Agricultural College is making every effort to locate the best certified seed available for Ohio growers.

SEED PRODUCTION UNDER IRRIGATION NOT UNDERSTOOD

C. L. Fitch, Ames, Iowa

One of the fascinating and unsolved mysteries of the mystic potato is why irrigation injures potatoes for seed. William Stuart and the writer have been writing each other about this matter and are agreed that a lot of careful scientific study on this problem would be well and that it might pay large dividends.

The field evidence is that the injury is done by soakage. Water may also distribute disease. The soil temperatures in arid sunshiny and irrigated regions are high. Such regions tend to concentrate potato acreage and to develop a high fungus population. Soakage and temperature combine to kill roots and to admit fusaria to the stems. Soakage tends to ripen potatoes. In this list may be found all or most of the factors to be investigated.

Southern Idaho is one of the finest potato regions on earth. The Greeley district of Colorado has great numbers of growers of the highest skill; but both these districts and many other irrigated sections have very difficult seed situations. The newer the ground the farther north, the better drained, the higher up and the more slope, these troubles seem to lessen; but the older, the warmer, the wetter, and the flatter the land; the more these difficulties develop.

Seed should be grown under mulch and under sprinkling irrigation, in cool ground, in soil with very carefully controlled moisture, and different amounts of it, in sterilized ground, and to ripeness and without maturity, and in all combinations of these conditions, and in quantity, for test of yielding power, in the difficult conditions. Good pathologists, physiologists and chemists should study every step. Thereby these problems might be solved and a practical profitable way out be found.

A study of the writer's bulletin 216 Colorado and of the temperature studies by Dr. L. R. Jones of Wisconsin, would be good beginnings for such investigations.

Write to our advertisers for literature. Improvements are constantly being made in machinery, fertilizer, spray materials and seed potatoes. Read and learn about them.

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PROGRAM OF THE FOURTEENTH ANNUAL MEETING
of the
POTATO ASSOCIATION OF AMERICA
To Be Held December 28-29-30, 1927
AT NASHVILLE, TENNESSEE

WEDNESDAY AFTERNOON SESSION, DECEMBER 28, 1:30 P. M.

1. Address of welcome. (10 minutes)
2. President's Address. (10 minutes) H. C. Moore, East Lansing, Mich.
3. Report of the Secretary. 15 minutes) W. M. Peacock, U. S. D. A., Washington, D. C.
4. Report of Editor of American Potato Journal. (15 minutes) W. M. Peacock, Washington, D. C.

5. Report of the Treasurer. (10 minutes) E. V. Hardenburg, Ithaca, N. Y.
6. Appointment of committtees on organization, auditing, nomination, resolutions. (10 minutes)
7. Report of Research Committee. (15 minutes) Wm. Stuart, Chairman U. S. D. A., Washington, D. C.
8. Report of Committee on Varietal Nomenclature and Strain Testing. (15 minutes) H. C. Moore, Chairman, East Lansing, Michigan.
9. Report of Committee on Seed Potato Certification. (60 minutes) W. H. Martin, Chairman, New Brunswick, New Jersey.
Discussion

THURSDAY MORNING SESSION, DECEMBER 29, 9:30 A. M.

POTATO STORAGE AND MARKETING:

10. The Storage of Potatoes immediately after harvest. (15 minutes) W. M. Peacock and R. C. Wright, U. S. D. A., Washington, D. C.
11. Effect of Temperature on Rest period and dormancy of potatoes. (15 min.) R. C. Wright and W. M. Peacock, Washington, D. C.
12. The Storage of Cut Seed Potatoes. (15 minutes) W. M. Peacock and R. C. Wright, U. S. D. A., Washington, D. C.
13. Potato Storage Problems in Michigan. (20 minutes) F. E. Fogle, East Lansing, Michigan.
14. Storage of Potatoes in Commercial Warehouses. (20 min.) W. I. Pentzer and R. G. Hill, U. S. D. A., Washington, D. C.
15. A Comparison of varieties in respect to Physiological shrinkage in storage. (20 minutes) C. O. Appleman, College Park, Maryland.
16. Cooperative Marketing. (20 minutes) A. W. McKay and F. G. Robb, U. S. D. A., Washington, D. C.
17. Marketing the Kansas Potato Crop. (20 minutes) E. A. Stokdyk, Manhattan, Kansas.

THURSDAY AFTERNOON SESSION, DECEMBER 29, 1:30 P. M.

Joint Session Potato Association of America and American Phytopathological Society.

BUILDING.....ROOM.....

FRIDAY MORNING SESSION, DECEMBER 30, 9:30 A. M.

Business meeting

SEED TREATMENT AND DISEASE CONTROL METHODS:

18. Report of committees:
Auditing committee (5 min.)
Nominating committee and election of officers (15 min.)
Resolution committee (10 min.)
19. Seed Treatment Experiments of 1927. (20 min.) C. R. Orton and G. F. Miles, Yonkers, New York.
20. Seed Potato Treatment for the control of Rhizoctonia and scab. (20 min.) R. W. Goss and H. O. Werner, Lincoln, Nebraska.
21. The value of organic mercury compounds in the control of seed and soil borne scab. (20 min.) W. H. Martin, New Brunswick, N. J.
22. Transmission studies of mosaic and spindle tuber. (20 min.) J. E. Kotila, East Lansing, Michigan.
23. Recent observations of the black leg disease in Maine. (20 min.) Donald Folsom and ....., Orono, Maine

FRIDAY AFTERNOON SESSION, DECEMBER 30, 1:30 P M.

SEED IMPROVEMENT AND PRODUCTION METHODS:

24. Advantages of growing seed potatoes on the tuber unit basis. (20 min.) E. D. Askegaard, Moorehead, Minnesota.

25. Raising the standard of certified seed by the tuber unit method. (20 min.) F. M. Harrington, Bozeman, Montana.
26. Some Certified Seed Surmises, John G. Gardner, Lexington, Ky.
27. Some Improvements in Planting Seed Potatoes. (20 min.) Fred H. Bateman, Philadelphia, Pennsylvania.
28. Some Physiological changes in the ontogeny of the potato plant. (20 min.) E. V. Hardenburg, Ithaca, New York.
29. Importance and prevention of potato seed piece decay. (20 min.) J. T. Rosa, Davis, California.
30. Fall crop Irish potato production in the south. (20 min.) J. A. McClintock, Knoxville, Tennessee.
31. Some instances of bud mutation in the potato. (20 min.) Charles F. Clark, U. S. D. A., Washington, D. C.
32. 1927 Experiments in the control of Hollow heart. (20 min.) H. O. Werner, Lincoln, Nebraska.

MEMBERSHIP CONTEST

Did you ever see a better list of prizes? There will be others added to the list. If you win a prize and have no use for it the reputation of any of these prizes will sell them. Those who work will win these prizes. They are going to be given to the persons who secure the largest numbers of new members.

The world is your territory in which to solicit membership. Just recently Professor Yonsif Milad, Department of Horticulture, Giza, Egypt, became a member. At present the Potato Association of America is represented in eleven countries.

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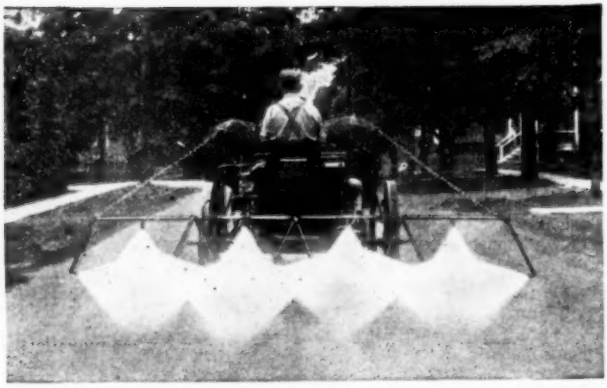

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"POTATO SITUATION IN 1927" is the title of a special mimeographed report, available on request from the Bureau of Agricultural Economics, U. S. Department of Agriculture, Washington, D. C.

CROP AND MARKET NEWS

PRICES ADVANCE; CROP ESTIMATE INCREASED

(Contribution from the Fruit and Vegetable Division, Bureau of Agricultural Economics, U. S. Department of Agriculture)

Potato price movements are very much like the waves of the sea, —marked periodical crests with troughs between them. About mid-October and again in early November, top of $2.00 per 100 pounds was reached in some shipping districts, with correspondingly high levels in city markets. Both these high points followed periods of depression and relatively low prices. Further effect of the November 10 crop report will be watched with interest. Just prior to the crop report, the general price level was 10c-25c higher than during early October.

Higher Prices in West

Exceptionally warm weather prevailed in most parts of the country during the fall, but November opened with freezing temperatures in many sections. Hopeful signs were appearing in the potato situation, chiefly as a result of lower temperatures. If Chicago may be taken as a barometer of the potato market, strengthening of prices there will bring encouragement all along

the line. During the opening week of November, an advance of 10c per 100 pounds occurred in Chicago carlot sales of sacked northern Round Whites, while Idaho Russet Burbanks moved up 15c to a range of $1.70-$1.90. General jobbing price of northern stock in the Middle West was $1.50-$2.10, but Chicago dealers got $1.40-$1.75 per 100 pounds, in carlots. Strengthening of the Chicago market came in spite of liberal to heavy supplies, sometimes amounting to 535 cars on track in a single day. Total arrivals in Chicago were nearly 1,000 cars for the first week of November.

Western Michigan shipping points advanced sharply to a range of $1.65-$1.75. Top of $1.55 was reached in Wisconsin and $1.40 in southeastern Minnesota. These were the highest f. o. b. prices since mid-October. Improvement was reported in the Idaho market, and closing quotations about the 8th of the month in the southern part of that State were 90c-$1.05. Western Nebraska dealers made some sales at $1.10. Shipments from the West were decreasing slowly. During the week ended November 5, the total from 10 western States was 1,820 cars, compared with 2,160 the week before and 1,730 during the same period last season. Colorado growers particularly are reluctant to ship many cars at the current prices. Output of the North Central region decreased about one-third to 1,760 cars for the week and was much lighter than a year ago. Minnesota made an unusual record, and the present total of 16,000 cars from that State is fully 5,000 more than to the same time in 1926.

Eastern Markets Unsettled

An unsettled condition prevailed in the East, with slight irregular changes of price. Wind-storms and New England floods affected the Maine situation to some extent. Telegraph and telephone service was temporarily disrupted. Aroostook County sales of Green Mountains advanced to $1.55-$1.75, according to whether stock was bulk or sacked, and country shippers in western New York did somewhat better than the week before at $1.95 per 100 pounds of sacked Round Whites. Eastern consuming centers reported Round Whites jobbing mostly at $1.85-$2.25, with Green Mountains bringing a premium of 15c-20c. Carlot movement from four eastern States was just about the same as during the first week of November, 1926—1,600 cars—but was one-third lighter than the record for the closing week of October. Maine outranked all other individual States with a total of 1,040 cars for the week, but Minnesota was a close second and Idaho was third in order.

During the second and third weeks of October, total potato shipments from 19 northern States were considerably heavier than those of a year ago, but the reverse was true during the final week of October and the opening days of November. Combined out-

put for the 4 weeks was about 31,000 cars, compared with 31,700 in 1926. The main-crop season total of 72,400 cars to November 5 was about 2,200 less than the corresponding figure for last season.

Monthly Crop Report

The yields of potatoes now reported indicate a crop of about 400,305,000 bushels, or about 1 per cent above the October forecast. In several States, including Pennsylvania, Ohio, South Dakota, Nebraska, Colorado and the Pacific Northwest, yields have proved to be above earlier expectations, but the estimates for Michigan, Wisconsin and Minnesota, where yields are very low this year, have been further reduced. One of the striking items in the November report was a reduction of 4,000,000 bushels, or 16 per cent, in the estimate for Virginia. This year's crop is below average in practically all States from the Dakotas east but is above average in the western States. Quality of the crop appears to be close to the usual average. Preliminary reports indicate that 68 per cent of the crop in the principal late States may grade U. S. No. 1, compared with 72 per cent last year and a five-year average of 67 per cent in this group of States. Yields for the entire country average about 114.5 bushels per acre, or nearly 10 bushels above the 10-year average figure.

The early potato crop in southern States is mostly out of the way by the end of June. The intermediate crop, grown chiefly in States from Virginia to New Jersey and in a belt extending from Virginia westward to Kansas, is about finished by September 30. In fact, most of the intermediate potatoes are marketed, or the shipping surplus disposed of, before September 1. Movement from the main-crop States is well under way by August and overlaps the intermediate potatoes for a month or two.

After September 1, practically all the supply until the following spring originates in States from Maine to Washington and north of the 40th parallel of latitude. It is this northern region, therefore, on which attention is now focused. More than two-thirds of the United States potato production is in this northern area. A few of the deficient-producing late-potato States (classed in the table below as among the intermediate sections) grow large quantities of potatoes but ship very few carlots. Their surplus is available for local consumption and is hauled to nearby markets by truck. Ohio is a good example of such States. The volume of Ohio-grown potatoes may influence to some extent the total quantity shipped into that State from outside sources, but it can scarcely be said that this "homegrown" stock fixes the market price.

The following figures, grouping production by areas, are of interest:

Potato Production Estimates

Period	Total crop 48 States	Shipped after September 1: Late crop 19 States	Surplus mostly shipped before September 1: Intermediate crop 16 States**	Surplus mostly shipped before September 1: Early crop, 13 States
	bushels	bushels	bushels	bushels
1927-July	392,943,000	278,154,000	83,294,000	31,495,000
1927-Aug.	410,714,000	292,425,000	86,643,000	31,646,000
1927-Sept.	399,798,000	275,698,000	92,290,000	31,810,000
1927-Oct.	394,757,000	268,714,000	94,747,000	31,296,000
1927-Nov.	400,305,000	274,920,000	93,512,000	31,873,000
1926-Final	356,123,000	251,788,000	74,635,000	29,700,000
5-yr. Avg.	394,135,000	279,957,000	86,791,000	27,387,000

**The so-called deficient-producing "late" potato States

According to November reports, this year's total crop appeared to be 44,000,000 bushels greater than the 1926 crop but only 6,000,000 above average production of the past five seasons. The early and intermediate crops combined were 21,000,000 bushels above last year's record, 19,000,000 of this increase being in the intermediate sections and mostly in Virginia, Maryland and New Jersey. Early and intermediate potatoes combined were about 11,000,000 bushels above average production of the last five years. Estimate for the 19 important main-crop States is now only 23,000,000 higher than the figure for 1926, and is actually short 5,000,000 bushels of equaling the average for this group.

Fair Returns to Growers

The extreme range of f. o. b. prices in country shipping sections was 90c to $1.95 per 100 pounds, the incline being upward from West to East. This is equivalent to a range of 54c-$1.17 per bushel, and returns to growers are somewhat below that level. Last year, the net cost of producing potatoes in western States was estimated at 56c per bushel and in northeastern States 74c, with the cost in the great North Central area at 52c a bushel. Average costs of production in northern and western States advanced sharply between 1924 and 1925, because of the light crop harvested in 1925, but there was practically no increase in cost last year. In view of the fact that nearly four-fifths of all late potatoes are grown in the northeastern and North Central States and considering that highest prices are being paid in those regions, it would seem that average returns to growers are giving at least a small margin of profit.

Canadian Situation

Canada's potato crop is now estimated at 45,500,000 hundredweight, compared with 48,680,000 last year. This is equivalent to

nearly 76,000,000 bushels, or about 20 per cent of the potato production in the United States. Blight seriously affected the crop in the Maritime Provinces, particularly in Nova Scotia. Canadian certified-seed production this year may amount to a million bushels. The New Brunswick potato crop is far below that of last year. Local estimates indicate that 5,000 cars of table stock may be shipped from that Province this season, or 3,000 less than during the 1926-27 season. About 2,000,000 bushels or more than 3,000 carloads of this year's crop may be exported from New Brunswick to Cuba, provided the higher tariff does not shut out much of the stock usually imported by that island. Trade reports indicate that the Cuban duty on potatoes has been increased to about 90c per sack of 180 pounds and that a further increase to $1.75 will be effective between December 1 and May 31. A preferential rate 20 per cent less than these figures obtains on imports from the United States. Shipments of Canadian potatoes to the United States this season to date have been much lighter than a year ago.

Kentucky.—The late potato crop was cut about in half by three weeks of intensively hot and dry weather early in September. The resulting crop is necessarily small, but well matured and of very good quality. Where seed treatment is practiced the percentage of scab is very small, though that is not true of the general run, for this was certainly a "scab year" in Kentucky.

Several men have had brought home to them very forcibly the fact that mongrel seed is not profitable to use. **On the average certified seed has made double the crop of uncertified.** An average acre yield among growers planting certified seed is about 100 bushels per acre; that of uncertified from 70 on down to nothing. **—John S. Gardner, Agent in Truck Crops, Nov. 7.**

REVIEW OF RECENT LITERATURE

FOLSOM, DONALD.—Virus Diseases of the Potato.—*Eighteenth Ann. Rpt. of the Quebec Soc. for the Protection of Plants, 1925-1926. 1927, p. 14-29, figs.* 1-18.

A virus is considered here as any causal agency whose structure is unknown or which is filterable, and which apparently reproduces itself in the host plant. A virus disease in potatoes is merely a symptom aggregate that has an undescribed cause. The present names should be regarded as local descriptive names, and priority should be discussed only in relation to the causal agencies, as yet undetermined. These maladies are also known as physiological diseases, phloem diseases, degeneration diseases, and viroses. Rugose mosaic infection has been prevented so far by passing the extract through Berkefeld filter candles. Multiplication in the host plant is assumed to occur when symptoms appear in other parts

of the plant than those inoculated. Perpetuation by the tubers is a reason for the name degeneration diseases. Determining identity of virus diseases of different regions is often difficult, and is not always helpful.

Symptoms are defined and are listed for 11 virus diseases as they appear in the Green Mountain variety in northeastern Maine. Inoculative symptoms often differ from perpetuation symptoms. Symptoms of one disease may vary with the season, climate, age of the plant, and the variety of the host plant. Irish Cobblers are not endangered by mild mosaic Green Mountains because of immunity, but may carry leafrolling mosaic masked and so endanger healthy Green Mountains. The beneficial effects of selection in apparently healthy stocks probably often has been due to the reduction of masked virus diseases. Selection also has proved disappointing probably because of the spread of such diseases. The presence of the severe rugose mosaic and the masking of mild mosaic in one region may cause needless fear of all mosaics including the mild mosaic showing plainly in another more northern region. Regional variation in symptoms and in the spread of a disease necessitates following up certified stocks in the buying locality.

The prevalence of a disease depends upon its rate of spread, the use of healthy stocks, and other factors. The effects of these diseases vary as to yield rate, quality, and net profit. Control is approximated best by means of a rogued tuber-unit seed plot, isolated as far as possible.
